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Patent
Attorney Docket No. 1021500-000134

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	**MAIL STOP APPEAL BRIEF-PATENTS**
Stephen Roland Day	Group Art Unit: 3742
Application No.: 10/520,788	Examiner: STEPHEN J RALIS
Filed: January 11, 2005	Confirmation No.: 2434
For: LAMINATED GLAZING PANEL	

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Examiner's Answer issued on August 6, 2009 in this application presents a number of misguided arguments and raises a new issue not previously presented. In one respect, the Examiner incorrectly asserts that the reason an ordinarily skilled artisan would apply Naruke et al.'s disclosure to Baldridge's windshield is because both references disclose lights used in automobiles. The Examiner also improperly twists the Baldridge disclosure in an attempt to support the rejection of independent Claim 16. Further, the Examiner inappropriately tries to equate the conditions which exist during commonly-used short-interval reflow soldering to the harsh temperature and pressure conditions that prevail over an extended period of time during fabrication of a laminated glazing panel. Each of these points is discussed separately below.

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I. The Examiner Improperly Frames the Obviousness Inquiry

The earlier filed Appeal Brief explains why an ordinarily skilled artisan would not view Naruke et al.'s disclosure as relevant to Baldridge's windshield or the laminated glazing here -- primarily because the context in which Naruke et al. describes the use of LEDs is completely different from the use of a LED in a laminated glazing panel. As explained, an ordinarily skilled artisan, aware of the extended high temperature and pressure conditions to which laminated glazing panels are subjected during manufacture, would not view Naruke et al.'s disclosure of positioning LED's in a recess in a door as an indication that LEDs can or should be provided between the glass plies of Baldridge's laminated glazing panel.

On page 19 of the Examiner's Answer, the Examiner expresses disagreement with this position. Here, the Examiner states that the reason an ordinarily skilled artisan would view the disclosure in Naruke et al. to be applicable to Baldridge's windshield is because "(b)oth prior art references teach and suggest indicator means (lights) for use in automobile applications" (emphasis in original). This overly broad and simplistic characterization of the obviousness inquiry is misplaced.

That the Examiner here is able to fashion a characterization sufficiently broad to encompass the disclosures in both references (lights used in automobiles) is hardly the standard against which the obviousness determination should be viewed. Indeed, the proper focus is how a person of ordinary skill in the art would view the disclosures in the references. The Examiner's position here is that an ordinarily skilled artisan would blindly incorporate a LED in a laminated glazing such as Baldridge's windshield merely because Naruke et al. discloses a LED in an automobile. To say that one would apply Naruke et al.'s disclosure to Baldridge's windshield merely because both references involve lights used in automobiles does

pressure conditions occurring during fabrication of the laminated glazing panel. This is supported by documentary evidence in the form of the LED specification sheets. To the extent the record here establishes anything about predictable results, it is that replacing Baldridge's instrument indicators with Naruke's LEDs is not viable because the result would be a laminated glazing panel with inoperable light emitting elements. And, of course, because the LEDs are embedded in the laminated glazing panel, replacing damaged LEDs is not a viable option. Thus, no basis exists for the conclusory statement that modifying Baldridge's windshield to include Naruke et al.'s LED merely involves substituting one known element for another to obtain predictable results.

II. The Examiner's Treatment of Claim 16 Is Perfunctory at Best

The earlier-filed Appeal Brief discusses the method of Claim 16, noting that it requires pairing together two plastic plies, preparing a cut-out area in the upper plastic ply, positioning a circuit board in the cut-out area, and joining a further plastic ply to the paired plastic plies to create a composite ply that is then interleaved between two glass plies. The Appeal Brief also points out that the discussion beginning in line 19 of column 3 of Baldridge describes three possible constructions for the disclosed glass laminate: i) interposing a plastic interlayer between a pair of glass panels and positioning the indicator component between the plastic interlayer and one of the glass plates; ii) cutting portions of the plastic interlayer to provide a recess for the indicator component; or iii) laminating the indicator component between two layers of plastic positioned between the two glass plates. Thus, as explained previously, Baldridge does not disclose two plastic plies, at least the upper one of which is provided with a cutout, and a further plastic ply.

III. The Examiner Improperly Equates Reflow Soldering Conditions and Laminated Glazing Panel Manufacturing Conditions

The earlier submitted Appeal Brief refers to product specification sheets for LEDs manufactured by three different manufacturers – Kingbright, Toshiba and Osram. The Appeal Brief explains that the specification sheets identify maximum operating and storage temperatures for LEDs that are well below the minimum temperature to which laminated glazing panels are subjected during fabrication. The purpose for this explanation is rather straight forward – the maximum operating temperature and maximum storage temperature presumably represent the maximum temperature to which the LEDs can be subjected over an extended period of time. Since the fabrication of laminated glazing panels requires subjecting the glazing panels to significantly higher temperatures and pressures for an extended period of time, one would avoid using LEDs in laminated glazing panels.

The Examiner responds to this point by noting that the Toshiba and Osram specification sheets refer to reflow soldering temperatures approaching 240°C. A general understanding of reflow soldering reveals this for what it is -- a red herring. What is surprising is that this issue is raised now, on appeal, for the first time.

Reflow soldering refers to a process in which a solder paste is applied to the surface of a circuit board. This allows surface mounted devices (e.g., a LED) to be temporarily held on the circuit board. The circuit board, with the surface mounted devices, is then placed in a reflow furnace. In the furnace, the circuit board is subjected to a controlled and relatively short heating cycle to heat the solder paste to a temperature causing the solder to generally flow and make good contact with the surface mounted devices. Once the circuit board is cooled, the solder solidifies and the appropriate connection exists between the surface mounted devices and the

circuit board. This is a generally common way of fixing quite small surface mount devices, such as small LEDs, to a circuit board. It is thus not surprising that the Toshiba and Osram LED specification sheets refer to reflow soldering.

Page 7 of the Toshiba LED specification sheets and page 8 of the Osram LED specification sheets illustrate a temperature and time profile that occurs during reflow soldering. The Examiner implies that because the circuit board/LEDs are subjected to reflow soldering in a reflow furnace at a temperature up to 240°C, the LEDs can also withstand the extended and severe temperature/pressure conditions encountered during fabrication of laminated glazing panels. This is not an accurate characterization.

The purpose of the reflow soldering furnace is rather simple -- to heat the solder paste on the circuit board to its melting temperature so that when the solder paste is subsequently cooled, an electrical connection is made between the LED and the circuit board. It is apparent from the temperature/time profiles in the Toshiba and Osram LED specification sheets that reflow soldering during which temperature conditions exceed 100°C is about 4-5 minutes. It is further telling that the reflow soldering occurs under atmospheric conditions.

The fact that LEDs can be fixed in place by reflow soldering through use of a reflow soldering furnace hardly supports the position that a person of ordinary skill in the art would understand that LEDs can withstand the significant temperature and pressure conditions that occur for an extended period of time during laminated glazing manufacture. By way of example, it is not uncommon for laminated glazings to be positioned in an autoclave and subjected to a temperature of at least about 140°C at a pressure of up to 13 bar for at least 30 minutes. That an LED can be reflow soldered in a reflow soldering furnace according to the temperature/time

For at least the reasons discussed above and set forth in the earlier-filed Appeal Brief, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Respectfully submitted,

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Date: October 6, 2009

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